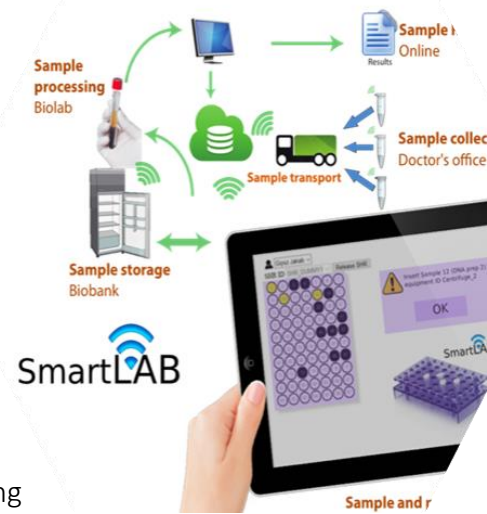


Secure monitoring of medical samples throughout the lab

Challenge & Solutions

High-throughput medical-diagnostics laboratories and bio-banks face an ever-growing number of biomedical samples to be processed and stored locally. This requires reliable and secure identification of test tubes in the entire laboratory ecosystem. In just one large-scale lab, this could involve tens of thousands of sample test tubes. These facilities are under constant pressure to monitor samples during processing, transportation and storage of tubes and to shorten the time it takes to provide patient results.

The innovative solution called SmartLAB responds to all these challenges. With Intel's embedded Edison platform, the system uses RFID-tagged test tubes and sample holders. The touchless and highly flexible radio-frequency-identification technology ensures reliable and secure monitoring of test tubes. It enables tracking sample movement with continuous quality assurance seamlessly integrated in the laboratory ecosystem, therefore reducing risk of sample loss or misprocessing, while providing patient results more efficiently.



EuroCPS Support

In this experiment of the EUROPCS project BME took the role of the DIH enabling an SME of their eco-system to take advantage from newest digital technology. They integrated their leading-edge knowledge about Cyber-Physical-Systems (CPS) into the platforms of technology providers INTEL and STM such that the SME Neumann Diagnostics was provided with the solution and guidance to add important features to their existing tests for cancer prevention and related laboratory products.

Digital Skills

Neumann Diagnostics: Laboratory information-management technologies, laboratory sample processing technologies, database management

BME: Embedded systems, wireless technologies (ZigBee, RFID), electronics design and testing, mechanical platform design

Company

Neumann Diagnostics is a data driven biotech company based in Budapest (HUN) www.neumannndx.com



6 employees

Partners:

Intel (LE) IE
BME (RTO) HU

Since 2014



Impact/What's next

Neumann expects SmartLAB to boost its revenue by up to €2 million over the next five years. It is positioned to enable highly automated workflows extended with quality-controlled, sample-handling solutions for high-throughput labs, especially in the field of infectious diseases like STDs and HPV screening, which involve millions of patients in the EU.

The reagent market for HPV screening in Europe is forecasted to reach €500 million within 10 years. In addition, SmartLAB as an additional service may increase the value of the laboratory systems the company offers.